

Prophylactic cranial irradiation

Prophylactic [Whole brain radiotherapy](#) did not result in longer overall survival compared with observation in patients with extensive-disease [Small-cell lung cancer](#). Prophylactic cranial [irradiation](#) is therefore not essential for patients with extensive-disease small-cell lung cancer with any response to initial chemotherapy and a confirmed absence of brain metastases when patients receive periodic MRI examination during follow-up ¹⁾.

Figlin et al. retrospectively analyzed the risk of [Non-Small cell lung cancer intracranial metastases](#) recurrence in 1532 patients who were surgically treated between 1977 and 1986 for Stage I, II, or III [non-Small-cell lung cancer](#), after rigorous surgical and pathological staging. This analysis was undertaken as a background for a possible randomized clinical trial of [prophylactic cranial irradiation](#) in such patients. One hundred four patients (6.8 percent) had documented first recurrences involving the brain, including 98 patients (6.4 percent) in whom the brain was the sole site of first recurrence. Sixty patients (3.9 percent) had only intracranial involvement at the time of death. Prognostic variables that had a significant effect on the time to recurrence in the brain were histologic features of the carcinoma (patients with nonsquamous-cell cancers were more at risk than those with squamous-cell cancer), the T1N1/T2N0 and T2N1 staging subsets (T1, tumor less than or equal to 3 cm in diameter; T2, tumor greater than 3 cm; N0, no regional lymph-node metastases; N1, ipsilateral hilar-lymph-node metastases), and initial weight loss of more than 10 percent.

They conclude that prophylactic cranial irradiation would at best benefit only a very small subset of these patients. They believe, therefore, that neither prophylactic cranial irradiation nor a randomized trial is indicated in patients with non-small-cell lung cancer who have undergone complete resection ²⁾.

¹⁾

Takahashi T, Yamanaka T, Seto T, Harada H, Nokihara H, Saka H, Nishio M, Kaneda H, Takayama K, Ishimoto O, Takeda K, Yoshioka H, Tachihara M, Sakai H, Goto K, Yamamoto N. Prophylactic cranial irradiation versus observation in patients with extensive-disease small-cell lung cancer: a multicentre, randomised, open-label, phase 3 trial. *Lancet Oncol*. 2017 May;18(5):663-671. doi: 10.1016/S1470-2045(17)30230-9. Epub 2017 Mar 23. PubMed PMID: 28343976.

²⁾

Figlin RA, Piantadosi S, Feld R; Lung Cancer Study Group. Intracranial recurrence of carcinoma after complete surgical resection of stage I, II, and III non-small-cell lung cancer. *N Engl J Med*. 1988 May 19;318(20):1300-5. PubMed PMID: 2834646.

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